

REMARKS

Claims 1 and 3-5 stand rejected under 35 USC 102(b) as being anticipated by Choi (WO 94/02995).

In particular, the Examiner alleged on page 4, lines 6-9, of the Action that the claimed “properties are inherent” in Choi’s separator “given that both Choi and the instant application utilize the same material.” In other words, the Examiner alleged that Choi’s separate is likely to liberate or elute “1.0 ml or less per 100 cm² of reducing substance, as calculated from a consumption of a 0.01 N potassium permanganate solution per 100 cm² of the porous membrane” as recited in independent claim 1 of the present application because Choi discloses recited materials for producing the claimed lead-acid battery separator. The applicants disagree.

While the Examiner relied on the types of materials that are used to produce Choi’s separator to establish that Choi’s separator would elute the recited amount of reducing substances, the quantity of reducing substance liberated or eluted of a separator does not depend solely on the “types of materials” used to make the separator. Rather, the quantities of the materials that were used are important in determining the amount of reducing substance that is liberated or eluted from a separator under a test condition. Choi does not disclose the various quantities of materials that may be used in obtaining the claimed lead-acid battery separator that are disclosed in the present

application. Accordingly, whether Choi's separator may liberate or elute the recited amount of reducing substance under the test condition is unknown.

In addition, since Choi does not disclose the appropriate quantities of materials which must be used, Choi does not provide sufficient guidance to those skilled in the art to obtain the claimed lead-acid battery separator. Accordingly, Choi does not disclose or suggest the separator now recited in independent claim 1. Claims 3-5 depend from independent claim 1. Accordingly, this anticipation rejection should be withdrawn.

Further, as discussed during the interview held on December 7, 2009, the claimed limitation regarding the amount of reducing substance liberated or eluted from the separator is not a product-by-process limitation. Rather, it is a physical characteristic of the claimed separator.

As indicated on page 4, lines 11-15, of this application, the claimed invention concerns a separator for a lead-acid battery that releases only a limited amount of reducing substance (1.0 ml of less per 100 cm² as claimed) when the separator is subjected to certain test conditions, as described, for example, on page 16, line 3, to page 18, line 17, of the specification. When four test pieces of an embodiment of a separator according to the claimed invention were subjected to the claimed test condition (subjecting four separator test pieces to 24 hours of electrolysis carried out at about 25° C with a direct current of 1.2 A by using an electrolytic cell composed of the porous

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membrane, a positive electrode, a negative electrode and diluted sulfuric acid), the recited amount of reducing substance were liberated or eluted from the test pieces. This amount of reducing substance liberated or eluted is characteristic of the claimed separator, much like a melting point or a boiling point would be characteristic of a compound. Since Choi fails to disclose or suggest the same, this rejection should be withdrawn.

Claims 6-7 stand rejected under 35 U.S.C. 103(a) as obvious over Choi (WO 94/20995), as applied to claims 1 and 3-5 above, and in further view of Tsuda, et al (U.S. 6,361,865).

As mentioned above, the Choi reference fails to disclose or suggest a separator that liberates or elutes the recited amount of reducing substance under the recited test condition of independent claim 1. The Examiner cited Tsuda merely to disclose “sodium diakylsulfosuccinate.” Tsuda also fails to disclose or suggest the recited separator. Claims 6 and 7 depend from independent claim 1. Accordingly, this obviousness rejection should be also withdrawn.

Claim 8 stands rejected under 35 U.S.C. 103(a) as obvious over Choi (WO 94/20995), as applied to claims 1 and 3-5 above.

As explained above, the Choi reference fails to disclose or suggest a separator for a lead-acid battery that liberates or elutes the amount of reducing substance now recited in independent claim

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1. Claim 8 depends from independent claim 1. Accordingly, this rejection should be also withdrawn.

Further, the applicants hereby amend the specification in accordance with the local practice. Specifically, the paragraphs found on page 3, line 19, to page 4, line 15, of this application were moved from the “Background Art” section to the “Summary of the Invention” (or, the “Disclosure of the Invention” section). Further, a priority statement has been added to the beginning of the specification.

There are no additional outstanding objections or rejections in this application. Accordingly, applicants respectfully request an early action passing this application to issue as a patent.

If, for any reason, it is felt that this application is not now in condition for allowance, applicants respectfully request the Examiner to contact applicants’s undersigned attorney at the telephone number provided below to arrange for an interview.

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In the event that this paper is not timely filed, applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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Enclosures: Petition for Extension of Time

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